

What is claimed is:

1. A data communications system comprising:

an outside plant, the outside plant including a distribution fiber, a splitter and a plurality of drop fibers;

a head-end, the head-end being coupled to the splitter via the distribution fiber;

a first network unit, the first network unit being coupled to the splitter via a first of the plurality of drop fibers, wherein the first network unit receives a first upstream data stream from a first user source in a packet format, modulates a first signal with the first upstream data stream and transmits the modulated first signal to the head-end via the outside plant; and

a second network unit, the second network unit being coupled to the splitter via a second of the plurality of drop fibers, wherein the second network unit receives a second upstream data stream from a second user source in a packet format, modulates a second signal with the second upstream data stream and transmits the modulated second signal to the head-end via the outside plant,

whereby the first and second network units can transmit the modulated first and second signals to the head-end substantially simultaneously without collision.

2. The system of claim 1, wherein at least one of the first and second signals is a carrier signal.

3. ~~The system of claim 1, wherein at least one of the first and second network units receives upstream data via an Ethernet interface.~~

4. The system of claim 1, wherein the first and second network units comprise optical network units.

5. The system of claim 1, wherein the head-end receives the first and second upstream data streams and provides the first and second upstream data streams in a packet format.

6. ~~The system of claim 1, wherein the head-end comprises an Ethernet adapter circuit.~~

7. ~~The system of claim 1, wherein each network unit includes:
an adapter circuit, the adapter circuit receiving the upstream data;
a modulator, the modulator being coupled to the adapter circuit and modulating the carrier signal with the upstream data;
and
a transmitter, the transmitter being coupled to the modulator and generating an optical signal in accordance with the modulated carrier signal.~~

8. The system of claim 7, wherein each network unit includes a bias control circuit coupled between the modulator and the transmitter, the bias control circuit disabling the transmitter in the absence of a signal from the modulator.

9. The system of claim 7, wherein the modulator comprises a quadrature phase-shift keying modulator.

10. The system of claim 7, wherein the modulator comprises a frequency-shift keying modulator.

11. The system of claim 7, wherein the transmitter includes a 1.3 μm laser.

12. The system of claim 7, wherein the adapter circuit provides an Ethernet interface for coupling to a data communications device.

13. The system of claim 1, wherein the head-end transmits a downstream data stream to the first and second network units via the outside plant.

14. The system of claim 1, wherein:

the head-end includes a transmitter, a receiver and a wavelength-division multiplexing device, and

each network unit includes a transmitter, a receiver, and a wavelength-division multiplexing device,

wherein in each of the head-end and the network units, the wavelength-division multiplexing device is coupled to the outside plant, the receiver and the transmitter, the wavelength-division multiplexing device coupling optical signals of different wavelengths on the outside plant.

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